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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,821	02/03/2004	Shunpei Yamazaki	740756-2705	9517

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EXAMINER	
LIN, JAMES	

ART UNIT	PAPER NUMBER
1792	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/769,821	YAMAZAKI, SHUNPEI	
	Examiner	Art Unit	
	Jimmy Lin	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-9 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-9 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/6/2009 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 2, 4-9 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not provide support for amending the recitation of "display device" to "device" because nowhere does the specification teach the use of the present invention as being applied to anything but a display device. For example, there is no support for the "device" as presently claimed to be a medical device or a writing device. Therefore, the claims present new matter.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by WO 02/40742 (listed in the IDS filed 2/23/2005; references made are to the English equivalent U.S. Publication No. 2004/0050685, hereinafter "Yara").

Yara discloses a method of plasma treatment of an article under atmospheric pressure (i.e., about 760 Torr) [0041]. The article can be a semiconductor element or metal (i.e., a conductor film). Example 1 describes a method of etching a silicon wafer [0103]. The plasma treatment means can have a set of electrodes, wherein one electrode 3 surrounds the other electrode 2 (Fig. 7). The plasma treatment means can be used for an etching treatment [0085].

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyakawa (U.S. Patent No. 6,051,150, listed in the IDS filed 8/19/2008) in view of Yara '742.

Miyakawa teaches a method of etching an ITO film of a liquid crystal display (LCD). The etching is performed at about atmospheric pressure (i.e., about 760 Torr) in a plasma treatment chamber (abstract). A reactive gas is discharged to region 16 in the direction of arrow B as shown in Fig. 5 (col. 6, line 59-col. 7, line 13). The plasma treatment means is provided inside the plasma treatment chamber (Figs. 1, 5, and 6).

Miyakawa does not explicitly that the plasma means has one set of electrodes, wherein one electrode surrounds the other electrode. Miyakawa only teaches a pair of electrodes placed vertically disposed opposite to each other (Figs. 1 and 6). However, Yara teaches that a plasma means using parallel flat plate type electrode setup (i.e., the setup of Miyakawa) ([0086]; Figs. 8(a)-8(b)) was operably equivalent to a plasma means using a first electrode surrounding a second electrode ([0085]; Fig. 7). The teachings of Yara would have presented a recognition of equivalency in the prior art and would have presented strong evidence of obviousness in

substituting one plasma means for the other. The substitution of equivalents requires no express suggestion. See MPEP 2144.06.II. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a plasma means having a first electrode surrounding a second electrode as taught in Yara, as opposed to the plasma means of Miyakawa, with a reasonable expectation of success.

Claim 4: Miyakawa teaches that a resist mask can be formed over the ITO film (col. 5, line 64-col. 6, line 4).

Claim 6: Miyakawa does not explicitly teach that the size of the LCD substrate has a size of 1,000 x 1,200 mm^2 or more. However, Miyakawa recognizes that the size of LCD panels is continually increasing in size and that the method of etching accommodates for the continual increase (col. 9, lines 21-24). One of ordinary skill in the art would have recognized that the process of Miyakawa would have provided an operable method for etching an ITO film at these increased sizes with predictable results. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have performed the ITO etching method of Miyakawa on any substrate size, including those within the claimed range, with a reasonable expectation of success.

8. Claims 1, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyakawa '150 in view of Koinuma et al. (U.S. Patent No. 5,549,780, listed in the IDS filed 3/2/2006).

Miyakawa teaches a method of etching an ITO film of a liquid crystal display (LCD). The etching is performed at about atmospheric pressure (i.e., about 760 Torr) in a plasma treatment chamber (abstract). A reactive gas is discharged to region 16 in the direction of arrow B as shown in Fig. 5 (col. 6, line 59-col. 7, line 13). The plasma treatment means is provided inside the plasma treatment chamber (Figs. 1, 5, and 6).

Miyakawa teaches a plasma means, but does not explicitly that the plasma means has one set of electrodes, wherein one electrode surrounds the other electrode. However, Koinuma teaches that it was well known to have used a first electrode surrounding a second electrode for a plasma means (col. 5, lines 46-62; col. 7, lines 33-36; Fig. 1). Plasma is generated at about atmospheric pressure (col. 6, line 61-col. 7, line 8). The plasma is used for an etching method

(col. 5, lines 46-47). The teachings of Miyakawa and Koinuma would have presented a recognition of equivalency in the prior art and would have presented strong evidence of obviousness in substituting one plasma means for the other in a process of etching. The substitution of equivalents requires no express suggestion. See MPEP 2144.06.II. One of ordinary skill in the art would have recognized that the plasma means of Koinuma and the plasma means of Miyakawa would have performed similar functions and achieved similar results such that the use of one plasma means over the other would have yielded predictable results. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used the plasma means of Koinuma, as opposed to the plasma means of Miyakawa, with a reasonable expectation of success. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness (MPEP 2144.07).

Claims 4 and 6 are rejected for substantially the same reasons as discussed above in paragraph 6.

9. Claims 2, 5, 7-8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyakawa '150 in view of Yara '742 as applied to claims 1 and 4 above, and further in view of Inoue (JP 07-024579, listed in the IDS filed 2/23/2005).

Miyakawa and Yara do not explicitly teach using a plurality of sets of electrodes for generating plasma. However, Miyakawa does teach that the ITO is selectively patterned. Accordingly, Inoue teaches a method of generating plasma in restricted regions (abstract). The apparatus comprises of a plurality of plasma generating electrodes, which are moved in the X and Y directions such that an etching pattern can be formed (Fig. 1). Because Inoue teaches that such a method was operable for selectively plasma etching a substrate, it would have been obvious to one of ordinary skill in the art at the time of invention to have applied the plasma etching apparatus of Inoue to the plasma etching method of Miyakawa with a reasonable expectation of success. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945).

Claims 7-8: Inoue teaches that the plasma treatment means can scan the substrate in the X and Y directions (Fig. 1).

Claim 12: Inoue teaches that the plasma treatment means can move along a rail (Fig. 1).

10. Claims 2, 5, 7-8, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyakawa '150 in view of Koinuma '780 as applied to claims 1 and 4 above, and further in view of Inoue '579 for substantially the same reasons as discussed above in paragraph 6.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyakawa '150 in view of Yara '742 as applied to claims 1 and 4 above, and further in view of Seki (JP 11-340129, listed in the IDS filed 2/23/2005).

Miyakawa does not explicitly teach that the resist mask is formed by use of liquid droplet jetting means. In fact, Miyakawa is completely silent as to how the resist film is formed. Accordingly, Seki teaches that a resist material can be dissolved in a solvent and deposited onto a substrate via an ink jet method. This method can provide a manufacturing process at low costs (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed the resist mask of Miyakawa using an ink jet method as the particular resist film forming method with a reasonable expectation of success. One would have been motivated to do so in order to have used a low cost manufacturing method.

12. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyakawa '150 in view of Koinuma '780 as applied to claims 1 and 4 above, and further in view of Seki '129 for substantially the same reasons as discussed above in paragraph 8.

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*

Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 1, 4 and 6 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 5, 10, 15, 19 and 23 of U.S. Patent No. 7,189,654. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of '654 fully encompass present claims 1 and 4.

Claim 6: '654 does not require that the substrate has a size of 1,000 x 1,200 mm^2 or more. However, the size of the substrate is merely a design choice and can be altered merely for aesthetic purposes. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the substrate size, including to a size within the claimed range, with a reasonable expectation of success and with predictable results.

15. Claims 2, 5, 7-8, and 12 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 5, 10, 15, 19 and 23 of U.S. Patent No. 7,189,654 in view of Inoue '579.

'654 does not require the use of a plurality of sets of electrodes. However, Inoue teaches a method of generating plasma in restricted regions (abstract). The apparatus comprises of a plurality of plasma generating electrodes, which are moved in the X and Y directions such that an etching pattern can be formed (Fig. 1). Because Inoue teaches that such a method was operable for selectively plasma etching a substrate, it would have been obvious to one of ordinary skill in the art at the time of invention to have applied the plasma etching apparatus of Inoue to the plasma etching method of '654 with a reasonable expectation of success. The selection of something based on its known suitability for its intended use has been held to

support a prima facie case of obviousness. Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945).

16. Claim 9 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 5, 10, 15, 19 and 23 of U.S. Patent No. 7,189,654 in view of Seki '129.

'654 does not require the resist mask to be formed by use of liquid droplet jetting means. However, Seki teaches that a resist material can be dissolved in a solvent and deposited onto a substrate via an ink jet method. This method can provide a manufacturing process at low costs (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed the resist mask of '654 using an ink jet method as the particular resist film forming method with a reasonable expectation of success. One would have been motivated to do so in order to have used a low cost manufacturing method.

Response to Arguments

17. Applicant's arguments filed 2/6/2009 have been fully considered but they are not persuasive.

Applicant argues that Miyakawa discloses plasma means comprising a "a pair of electrodes 2 which may be vertically disposed opposite to each other" and, thus, fails to disclose the feature of one electrode of the set of electrodes surrounds the other electrode of the set of electrodes. However, both Yara and Koinuma teach the use of a plasma means comprising one electrode surrounding the other electrode used for etching at atmospheric pressure. The teachings of Yara and Koinuma have been added to the rejections in order to teach the newly added limitations. See rejections above for details.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is (571)272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Frederick J. Parker/
Primary Examiner, Art Unit 1792

/Jimmy Lin/
Examiner, Art Unit 1792